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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/737,231	12/15/2003	Susan A. Alie	2550/177	6365
2101	7590	08/02/2005	EXAMINER	
BROMBERG & SUNSTEIN LLP 125 SUMMER STREET BOSTON, MA 02110-1618			CLARK, JASMINE JHIHAN B	
			ART UNIT	PAPER NUMBER
			2815	

DATE MAILED: 08/02/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/737,231

Applicant(s)

ALIE ET AL.

Examiner

Jasmine J. Clark

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on see PTOL 413 filed 11/23/04.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 14-20 is/are allowed.
- 6) ☒ Claim(s) 1 and 9-11 is/are rejected.
- 7) ☒ Claim(s) 2-8, 12 and 13 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 15 December 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 12/15/03, 03/31/05.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

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Election

1. Claims 14-20 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected group II, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on 11/06/04 via interview summary (see Form PTOL-413). Claims 14-20 have been canceled.

Drawings

2. The subject matter of this application admits of illustration by a drawing to facilitate understanding of the invention. Applicant is required to furnish a drawing under 37 CFR 1.81(c). No new matter may be introduced in the required drawing. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d).

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical

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Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

Claims 1, 9-11 are rejected under 35 U.S.C. 102(e) as being anticipated by Mastromatteo (EP 1 219 565 A1), submitted by the applicants from the International Report.

Mastromatteo shows in Fig. 10, for example a first wafer 51, a second wafer 52; and a bonding region 70 which serves as a conductive rim between the first and second wafers 51 and 52, the conductive rim electrically and mechanically connecting the first and second wafers, the conductive rim 70 and second wafer 52 at least in part sealing an area on the surface of the first wafer 51.

Concerning claims 9 and 10, wherein at least one of the first wafer and the second wafer comprises a silicon based material or single crystal silicon, please see paragraph [0035].

Concerning claim 11, please the above discussion under claim 1.

4. Claims 1, 9-11 are rejected under 35 U.S.C. 102(e) as being anticipated by Rudhard et al. (US 2004/0232500 A1), submitted by the applicants from the International Report.

Rudhard shows in Fig. 1, a second wafer (section 2) and in combination of silicon substrate 21 (see paragraph [0025]); and a first wafer (section 3) in combination with

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silicon wafer 36 (see paragraph [0030]); a semiconductor layer, eg, 25 which serves a conductive rim between the first and second wafers, the conductive rim electrically and mechanically connecting the first and second wafers, the conductive rim and second wafer at least in part sealing an area on the surface of the first wafer.

Concerning claims 9 and 10, wherein at least one of the first wafer and the second wafer comprises a silicon based material and/or of polysilicon, please see [0025] and [0027].

Concerning claim 11, please see the above discussion under claim 1.

5. Claims 2-8, 12 and 13 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The applied references fail to teach and/or suggest the limitations as set forth in claims 2-8, 12 and 13.

6. Claims 14-20 are allowed.

The following is an examiner's statement of reasons for allowance: the applied references fail to teach and/or suggest a method of forming a MEMS device, the method comprising: placing rim material between a first wafer and a second wafer to form an intermediate apparatus, the rim material forming a closed loop defining an area on the first wafer; applying pressure to the intermediate apparatus; and heating the intermediate apparatus, after heating and applying pressure, the rim material

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cooperating with the first and second wafers to seal the area on the first wafer and electrically connect the first and second wafers as the claimed invention.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

References Cited

7. Hedler et al. (US 6,744,127B2) shows a structure of a semiconductor device and connections between wafers. However, Hedler fails to disclose and/or suggest having conductive rim between the first and second wafers, the conductive rim electrically and mechanically connecting the first and second wafers, the conductive rim and second wafer at least in part sealing an area on the surface of the first wafer as set forth in the claimed invention. Please also see Chung (US 6,376,769), Sauk et al. (US 6,239,495 B1), Gaynes et al. (US 5,229,647), and Harney et al. (US 2005/0127499 A1)..

Telephone Inquiry Contacts

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jasmine J. Clark whose telephone number is (571) 272-1726. The examiner can normally be reached on Flex.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tom Thomas can be reached on (571) 272-1664. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Jjbc/07/21/05

**JASMINE CLARK
PRIMARY EXAMINER**

A handwritten signature in black ink, appearing to read 'Jasmine Clark', written over the printed name.